an easily available source of stemcells for patients everywhere. The increasing worldwide repository of CB units is improving the chances of finding a matched unit for more patients. We present our experience with UCBT as a single source of stem cells for unrelated transplantation in these patients.

CB Search Methods: Matched unrelated CB searches were done for 67 pediatric pts (0–16 yrs) with malignant (MD, n = 44) and nonmalignant (NMD, n = 23) disease from 1995 to 2007 in the NY Blood Center and Netcord. The probability of finding a 5/6 CB unit with > 3.0 × 10 7/kg (optimal match) was calculated comparing the period 1995–2001 vs 2002–07. **Transplant Patients and Methods:** 32 pts. (MD = 19, NMD = 13) received UCBT between 1996 and 2007. 12 pts with MD were standard risk (SR) for transplantation (ALL CR1–2, ANLL CR1, CML CP, MDS RAEB/RAEBt).1 pt received a 3/6, 18 a 4/6, 13 pts a 5/6 graft. Median cell dose was 4.3 × 10^7/kg (2.6–16.3). 3 pts received a double graft. Conditioning regimens were adapted to diagnosis. NMD received BuCyATG. 17 MD pts and 1 NMD pt received TBI. GvHD prophylaxis was CsA plus prednisone (n = 26), mtx (n = 2) or MMF (n = 4). Engraftment and EFS analysis was done for the entire group of transplanted pts and the MDSR plus NMD subset (n = 25). HLA match (5/6 vs others), cell dose (<4.0 vs >4.0 10 ^{7}/kg) and year of UCBT (96–01 vs 01–07) were compared for engraftment and survival in this subset. **Results:** An optimal matched CB unit was found for 6/41 pts (14%) in the 1995–2001 period vs 17/26 (65%, p > 0.001) in the 2001–2007 period. 19 transplanted pts (61%) engrafted. TRM was 25%, MD relapse 22%. EFS was 31% with median f/u of 21 months. Subset analysis of MDSR plus NMD pts showed engraftment of 70% and 3 yr EFS of 36%. In this group the only prognostic factor for survival was HLA match (5/6 vs 3/6 and 4/6: Hazard Ratio 14, p < 0.001). **Conclusion:** CB is a good alternative for unrelated stem cell transplantation in children. HLA matching appears to be the most important prognostic factor given a cell dose > 3.0 × 10 7/kg. Increasing availability of optimal matched CB units worldwide will make this approach feasible for more patients.

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AUTOLOGOUS STEM CELL TRANSPLANTATION IN CHILDREN WITH REFRACTORY OR RELAPSED HODGKIN DISEASE IN COLOMBIA

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Here we report a retrospective analysis performed to evaluate the results of autologous hematopoietic stem cell transplantation in pediatric patients with Hodgkin Disease (HD) in a single center in Bogota, Colombia.

Nineteen patients with relapsed or refractory HD underwent autologous stem cell transplantation between 1998 and 2006. 8 female/11 male, with mean age of 10.9 years (7–14). At diagnosis patients were staged: I and IIA 10, IIB 1, IIIA 1, IIIB 4 and stage IV 6. The response to first line therapy was: 8 patients had failure to induction, and 6 early relapse (before 12 months). At transplantation: 10 patients were in 2nd complete remission, 2 in 3th complete remission and 7 were in partial remission. The conditioning regimen was BEAM in 14 patients and other protocols with carmustine, etoposide and cyclophosphamide or melphalan in 5 patients.

With a mean 26 months of follow-up, (8–66), the 5 year OS was 73.3% and EFS of 51.9%. 8/19 patients (42%) relapsed between 3 and 48 months after transplantation, the main cause of death was progressive disease. One patient died before day +100 with a severe fungal infection.

This study group is too small to establish prognostic factors for relapse after transplantation, although is important for countries with limited resources to have data about local results. The OS and EFS in this group are similar to results in developed countries. Near 50% of patients with refractory or relapsed HD can be successfully treated with high dose chemotherapy and autologous stem cell rescue. It's important to have a longer follow up on these patients so we can perform analysis on prognostic factors for relapse and survival.

SOLID TUMORS

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TREATMENT OF EPSTEIN BARR VIRUS POSITIVE NASOPHARYNGEAL CARCINOMA WITH ADOPTIVELY TRANSFERRED CYTOTOXIC T LYMPHOCYTES

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Background: The strong association of nasopharyngeal carcinoma (NPC) with Epstein-Barr virus (EBV) makes adoptive immunotherapy with EBV-specific cytotoxic T cells (EBV-CTL) an attractive therapeutic option. We have evaluated the safety and efficacy of EBV-specific CTL (EBV-CTL) in two Phase I clinical trials. In the first trial, EBV-CTL were given alone and in the second trial, we aimed to enhance *in vivo* expansion of EBV-CTL by lymphodepleting patients prior to CTL infusion. For lymphodepletion we used CD45 monoclonal antibodies (MAbs) that unlike chemotherapy or radiation do not result in nonspecific destruction of the resident immune system. **Study Design:** The primary objective of these Phase I clinical trials was to determine the safety of escalating doses of EBV-CTL with or without lymphodepletion in EBV-positive NPC patients. The secondary objective was to determine the expansion, persistence and anti-tumor effects of infused EBV-CTL. **Results:** Thirty two patients with advanced-stage NPC received autologous EBV-CTL. Patients received a median of 2 (range 1–6) doses of CTL at 2 × 10^7–2 × 10^8 cells/m^2 per infusion. CTL administration was well tolerated except for transient swelling at known disease sites in 4 patients. Prior to CTL infusion, 8 patients were in remission, 22 had active disease, and 2 had abnormal imaging studies of unknown significance. Seven of 8 patients in remission prior to CTL infusion remain in remission 6–64 months post CTL. For the remaining 24 patients, the best overall response rate was 50% with 6 complete responses (CR/CRu), 2 partial responses, and 4 with stable disease during a median follow-up of 9 months (95% CI 2–16 months). Of the 6 with a CR: 4 have been sustained for 2–4 years, and 2 relapsed more than 2 years post CTL. Ten patients with active disease received CD45 MAbs prior to EBV-CTL and 8 were evaluable for immune reconstitution analysis. Infusion of CD45 MAbs resulted in transient lymphopenia (resolved within 7 days), increased serum IL-15 levels in 6 patients, and significant expansion of EBV-CTL within 8 weeks post-infusion in 3 patients. **Conclusion:** Treatment of EBV-positive NPC with EBV-CTL appears safe and can be associated with significant anti-tumor activity. Lymphodepletion with CD45 MAbs prior to CTL infusion is also safe and results in expansion of adoptively transferred CTL in a subset of patients. These encouraging results warrant further exploration of EBV-targeted immunotherapies for NPC.

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REGRESSION OF EXPERIMENTAL OSTEOSARCOMA AND EWING'S SARCOMA FOLLOWING TRANSFER OF HER2-REDIRECTED T CELLS

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Background: New therapies are needed for osteosarcoma (OS) and Ewing's sarcoma (EWS) since the prognosis for patients with metastatic and/or recurrent disease has not improved over the last two decades despite aggressive multimodal therapies. For immunotherapies, HER2 is an attractive target since it is expressed in ~ 40% of OS and up to 25% of EWS. While the use of HER2 monoclonal antibodies has been limited by low levels of HER2 expression on sarcoma cells, we show here that T cells expressing HER2-specific chimeric antigen receptors (CARs) have potent anti-sarcoma activity in animal models. **Methods:** Mitogen-activated T cells were transduced with a retroviral vector encoding a HER2-specific CAR with a CD28.ζ-signaling endodomain (HER2-T cells). We